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United States Patent [19]

Hair

[11] Patent Number: 5,191,573

[45] Date of Patent: Mar. 2, 1993

[54] **METHOD FOR TRANSMITTING A DESIRED DIGITAL VIDEO OR AUDIO SIGNAL**

[76] Inventor: **Arthur R. Hair**, 301 Oaklawn Dr., Pittsburgh, Pa. 15241

[21] Appl. No.: **586,391**

[22] Filed: **Sep. 18, 1990**

Related U.S. Application Data

[63] Continuation of Ser. No. 206,497, Jun. 13, 1988, abandoned.

[51] **Int. Cl.**[5] **G11B 5/86**; G11B 7/00; G11B 11/00

[52] **U.S. Cl.** **369/84**; 235/381; 235/380; 369/33; 369/34; 369/15; 369/85

[58] **Field of Search** 369/33, 34, 13, 15, 369/84, 85; 235/380, 381, 375; 364/479, 410

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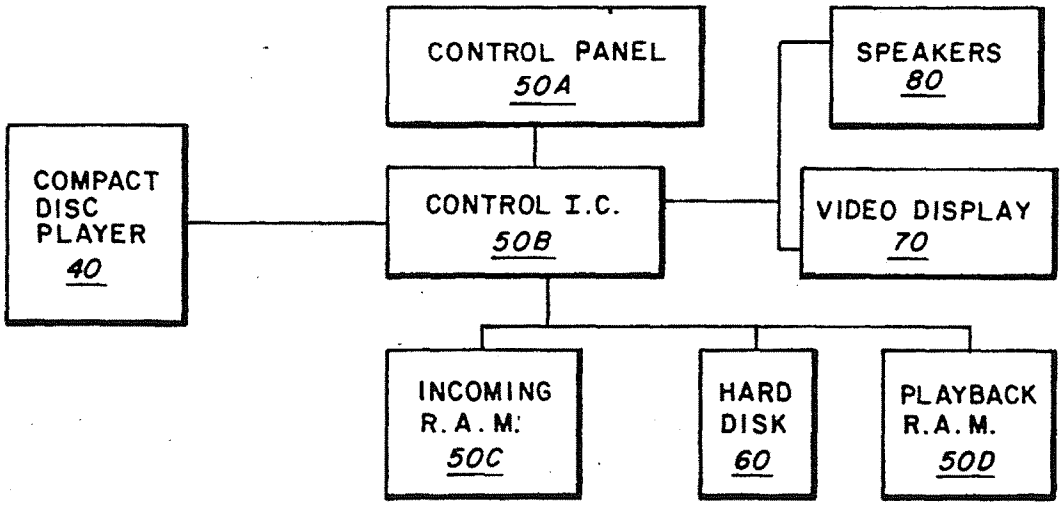
Primary Examiner—Hoa Nguyen
Attorney, Agent, or Firm—Ansel M. Schwartz

[57] **ABSTRACT**

The present invention is a method for transmitting a desired digital video or audio signal stored on a first memory of a first party to a second memory of a second party. The method comprises the steps of transferring money via a telecommunications line to the first party from the second party. Additionally, the method comprises the step of then connecting electronically via a telecommunications line the first memory with the second memory such that the desired signal can pass therebetween. Next, there is the step of transmitting the desired digital signal from the first memory with a transmitter in control and in possession of the first party to a receiver having the second memory at a location determined by the second party. The receiver is in possession and in control of the second party. There is also the step of then storing the digital signal in the second memory.

6 Claims, 2 Drawing Sheets



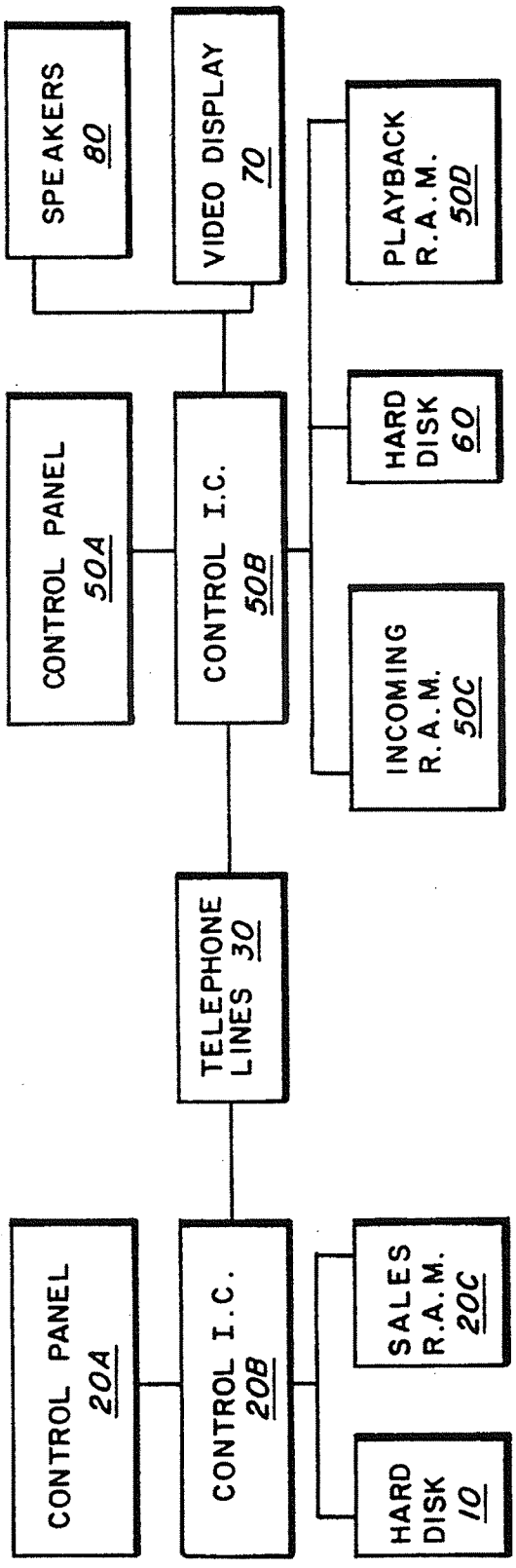

SPEAKERS 80
VIDEO DISPLAY 70
PLAYBACK R.A.M. 50D
CONTROL PANEL 50A
CONTROL I.C. 50B
HARD DISK 60
INCOMING R.A.M. 50C
TELEPHONE LINES 30
CONTROL PANEL 20A
CONTROL I.C. 20B
SALES R.A.M. 20C
HARD DISK 10

FIG. 1

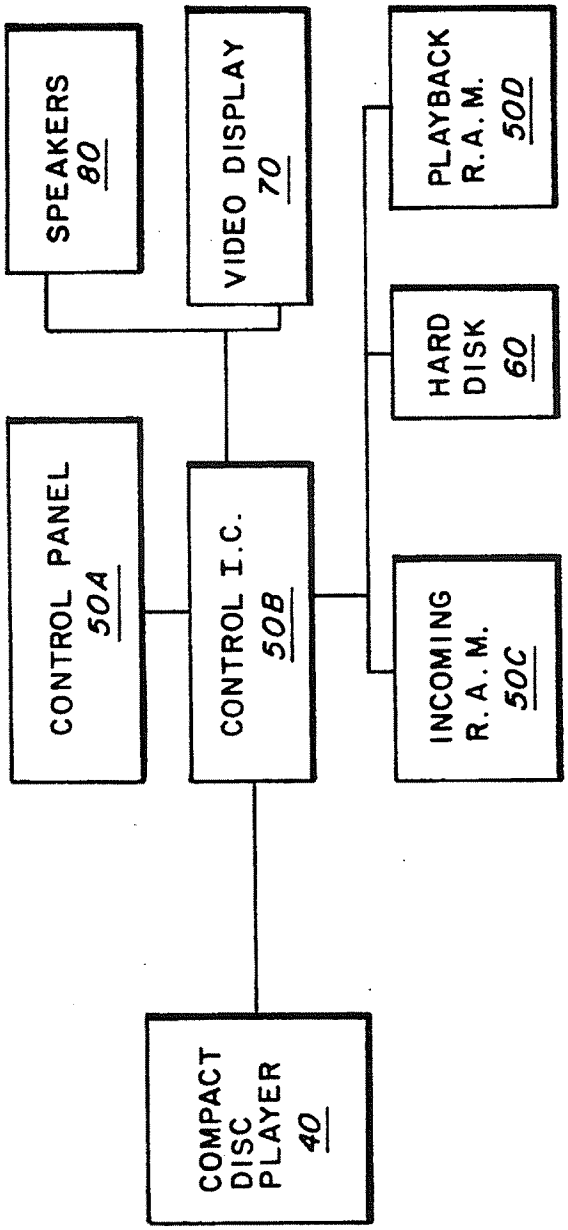

SPEAKERS
80
VIDEO DISPLAY
70
PLAYBACK
R.A.M.
500
HARD
DISK
60
CONTROL PANEL
504
CONTROL I.C.
508
INCOMING
R.A.M.
50C
COMPACT
DISC
PLAYER
40

FIG. 2

METHOD FOR TRANSMITTING A DESIRED DIGITAL VIDEO OR AUDIO SIGNAL

This is a continuation of copending application Ser. No. 07/206,497 filed on Jun. 13, 1988, now abandoned.

FIELD OF THE INVENTION

The present invention is related to a method for the electronic sales and distribution of digital audio or video signals, and more particularly, to a method which a user may purchase and receive digital audio or video signal from any location which the user has access to a telecommunications line.

BACKGROUND OF THE INVENTION

The three basic mediums (hardware units) of music: records, tapes, and compact discs, greatly restricts the transferability of music and results in a variety of inefficiencies.

CAPACITY: The individual hardware units as cited above are limited as to the amount of music that can be stored on each.

MATERIALS: The materials used to manufacture the hardware units are subject to damage and deterioration during normal operations, handling, and exposure to the elements.

SIZE: The physical size of the hardware units imposes constraints on the quantity of hardware units which can be housed for playback in confined areas such as in automobiles, boats, planes, etc.

RETRIEVAL: Hardware units limit the ability to play, in a sequence selected by the user, songs from different albums. For example, if the user wants to play one song from ten different albums, the user would spend an inordinate amount of time handling, sorting, and cueing the ten different hardware units.

SALES AND DISTRIBUTION: Prior to final purchase, hardware units need to be physically transfered from the manufacturing facility to the wholesale warehouse to &:he retail warehouse to the retail outlet, resulting in lengthly, lag time between music creation and music marketing, as well as incurring unnessary and inefficient transfer and handling costs. Additionally, tooling costs required for mass production of the hardware units and the material cost of the hardware units themselves, further drives up the cost of music to the end user.

QUALITY: Until the recent invention of Digital Audio Music, as used on Compact Discs, distortion free transfer from the hardware units to the stereo system was virtually impossible. Digital Audio Music is simply music converted into a very basic computer language known as binary. A series of commands known as zeros or ones encode the music for future playback. Use of laser retrieval of the binary commands results in distortion free transfer of the music from the compact disc to the stereo system. Quality Digital Audio Music is defined as the binary structure of the Digital Audio Music. Conventional analog tape recording of Digital Audio Music is not to be considered quality inasmuch as the binary structure itself is not recorded. While Digital Audio Music on compact discs is a technological breakthrough in audio quality, the method by which the music is sold, distributed, stored, manipulated, retrieved, played and protected from copyright infringements remains as inefficient as with records and tapes.

COPYRIGHT PROTECTION: Since the invention of tape recording devices, strict control and enforcement of copyright laws have proved difficult and impossible with home recorders. Additionally, the recent invention of Digital Audio Tape Recorders now jeopardizes the electronic copyright protection of quality Digital Audio Music on Compact Discs or Digital Audio Tapes. If music exists on hardware units, it can be copied.

Accordingly, it is an objective of this invention is to provide a new and improved methodology/system to electronically sell and distribute Digital Audio Music.

A further objective of this invention to provide a new and improved methodology/system to electronically store and retrieve Digital Audio Music.

Another objective of this invention is to provide a new and improved methodology/system to electronically manipulate, i.e., sort, cue, and select, Digital Audio Music for playback.

Still another objective of this invention is to offer a new and improved methodology/system which can prevent unauthorized electronic copying of quality Digital Audio Music.

SUMMARY OF THE INVENTION

Briefly, this invention accomplishes the above cited objectives by providing a new and improved methodology/system of electronic sales, distribution, storage, manipulation, retrieval, playback, and copyright protection of Digital Audio Music. The high speed transfer of Digital Audio Music as prescribed by this invention is stored onto one piece of hardware, a hard disk, thus eliminating the need to unnecessarily handle records, tapes, or compact discs on a regular basis. This invention recalls stored music for playback as selected/programmed by the user. This invention can easily and electronically sort stored music based on many different criteria such as, but not limited to, music category, artist, album, user's favorite songs, etc. An additional feature of this invention is the random playback of songs, also based on the user's selection. For example, the user could have this invention randomly play all jazz songs stored on the user's hard disk, or randomly play all songs by a certain artist, or randomly play all of the user's favorite songs which the user previously electronically "tagged" as favorites. Further, being more specific, the user can electronically select a series of individual songs from different albums for sequential playback.

This invention can be configured to either accept direct input of Digital Audio Music from the digital output of a Compact Disc, such transfer would be performed by the private user, or this invention can be configured to accept Digital Audio Music from a source authorized by the copyright holder to sell and distribute the copyrighted materials, thus guaranteeing the protection of such copyrighted materials. Either method of electronically transfering Digital Audio Music by means of this invention is intended to comply with all copyright laws and restrictions and any such transfer is subject to the appropriate authorization by the copyright holder. Inasmuch as Digital Audio Music is software an this invention electronically transfers and stores such music, electronic sales and distribution of the music can take place via telephone lines onto a hard disk. This new methodology/system of music sales and distribution will greatly reduce the cost of goods sold

and will reduce the lag time between music creation and music marketing from weeks down to hours.

The present invention is a method for transmitting a desired digital video or audio signal stored on a first memory of a first party to a second memory of a second party. The method comprises the steps of transferring money via a telecommunications line to the first party from the second party. Additionally, the method comprises the step of then connecting electronically via a telecommunications line the first memory with the second memory such that the desired digital signal can pass therebetween. Next, there is the step of transmitting the desired digital signal from the first memory with a transmitter in control and in possession of the first party to a receiver having the second memory at a location determined by the second party. The receiver is in possession and in control of the second party. There is also the step of then storing the digital signal in the second memory.

Further objectives and advantages of this invention will become apparent as the following description proceeds and the particular features of novelty which characterize this invention will be pointed out in the claims annexed to and forming a part of this declaration.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF DRAWINGS

For a better understanding of this invention, reference should be made to the following detailed description, taken in conjunction with the accompanying drawings, in which:

FIG. **1** is a pictorial flow chart which may be used in carrying out the teachings of this invention for the purposes of electronic sales, distribution, storage, manipulation, retrieval, playback, and copyright protection of Digital Audio Music; and

FIG. **2** is a pictorial flow chart which may be used in carrying out the teachings of this invention for the purposes of electronic storage, manipulation, retrieval, and playback of Digital Audio Music.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the FIG. **1**, this invention is comprised of the following:

10 Hard Disk of the copyright holder
20 Control Unit of the copyright holder
20*a* Control Panel
20*b* Control Integrated Circuit
20*c* Sales Random Access Memory Chip
30 Telephone Lines/Input Transfer
50 Control Unit of the user
50*a* Control Panel
50*b* Control Integrated circuit
50*c* Incoming Random Access Memory Chip
50*d* Play Back Random Access Memory Chip
60 Hard Disk of the user
70 Video Display Unit
80 Stereo Speakers

The Hard Disk **10** of the agent authorized to electronically sell and distribute the copyrighted Digital Audio Music is the originating source of music in the configuration as outlined in FIG. **1**. The Control Unit **20** of the authorized agent is the means by which the electronic transfer of the Digital Audio Music from the agent's Hard Disk **10** via the Telephone Lines **30** to the user's Control Unit **50** is possible. The user's Control Unit would be comprised of a Control Panel **50***a*, a Control Integrated Circuit **50***b*, an Incoming Random Access Memory Chip **50***c*, and a Play Back Random Access Memory Chip **50***d*. Similarly, the authorized agent's Control Unit **20** would have a control panel and control integrated circuit similar to that of the user's Control Unit **50**. The authorized agent's Control Unit **20**, however, would only require the Sales Random Access Memory Chip **20***c*. The other components in FIG. **1** include a Hard Disk **60**, a Video (display Unit **70**, and a set of Stereo Speakers **80**.

Referring now to FIG. **2**, with the exception of a substitution of a Compact Disc Player **40** (as the initial source of Digital Audio Music) for the agent's Hard Disk **10**, the agent's Control Unit **20**, and the Telephone Lines **30** in FIG. **1**, FIG. **2** is the same as FIG. **1**.

In FIG. **1** and FIG. **2**, the following components are already commercially available: the agent's Hard Disk **10**, the Telephone Lines **30**, the Compact Disc Player **40**, the user's Hard Disk **60**, the Video Display Unit **70**, and the Stereo Speakers **80**. The Control Units **20** and **50**, however, would be designed specifically to meet the teachings of this invention. The design of the control units would incorporate the following functional features:

1) the Control Panels **20***a* and **50***a* would be designed to permit the agent and user to program the respective Control Integrated Circuits **20***b* and **50***b*,

2) the Control Integrated Circuits **20***b* and **50***b* would be designed to control and execute the respective commands of the agent and user and regulate the electronic transfer of Digital Audio Music throughout the system, additionally, the sales Control Integrated Circuit **20***b* could electronically code the Digital Audio Music in a configuration which would prevent unauthorized reproductions of the copyrighted material,

3) the Sales Random Access Memory Chip **20***c* would be designed to temporarily store user purchased Digital Audio Music for subsequent electronic transfer via telephone lines to the user's Control Unit **50**,

4) the Incoming Random Access Memory Chip **50***c* would be designed to temporarily store Digital Audio Music for subsequent electronic storage to the user's Hard Disk **60**,

5) the Play Back Random Access Memory Chip **50***d* would be designed to temporarily store Digital Audio Music for sequential playback.

The foregoing description of the Control Units **20** and **50** is intended as an example only and thereby is not restrictive with respect to the exact number of components and/or its actual design.

Once the Digital Audio Music has been electronically stored onto the user's Hard Disk **60**, having the potential to store literally thousands of songs, the user is free to perform the many functions of this invention. To play a stored song, the user types in the appropriate commands on the Control Panel **50***a*, and those commands are relayed to the Control Integrated Circuit **50***b* which retrieves the selected song from the Hard Disk **60**. When a song is retrieved from the Hard Disk **60** only a replica of the permanently stored song is retrieved. The permanently stored song remains intact on the Hard Disk **60**, thus allowing repeated playback. The Control Integrated Circuit **50***b* stores the replica onto the Play Back Random Access Memory Chip **50***d* at a high transfer rate. The Control Integrated Circuit **50***b* then sends the electronic output to the Stereo Speakers **80** at a controlled rate using the Play Back Random Access

Memory Chip 50*d* as a temporary staging point for the Digital Audio Music.

Unique to this invention is that the Control Unit **50** also serves as the user's personal disk jocky. The user may request specific songs to be electronically cued for playback, or may request the Control Unit **50** to randomly select songs based on the user's criteria. All of these commands are electronically stored in random access memory enabling the control unit to remember prior commands while simultaneously performing other tasks requested by the user and, at the same &time, continuing to play songs previously cued.

Offering a convenient visual display of the user's library of songs is but one more new and improved aspect of this invention. As the Control Unit **50** is executing the user's commands to electronically sort, select, randomly play, etc., the Video Display Screen **70** is continually providing feedback to the user. The Video Display Screen **70** can list/scroll all songs stored on the Hard Disk **60**, list/scroll all cued songs, display the current command function selected by the user, etc. Further expanding upon the improvements this invention has to offer, the Video Display Screen **70** can display the lyrics of the song being played, as well as the name of the song, album, artist, recording company, date of recording, duration of song, etc. This is possible if the lyrics and other incidental information are electronically stored to the Hard Disk **60** with the Digital Audio Music.

The present invention is a method for transmitting a desired digital video or audio signal stored on a first memory of a first party to a second memory of a second party. The method comprises the steps of transferring money via a telecommunications line to the first party from the second party. Additionally, the method comprises the step of then connecting electronically via a telecommunications line the first memory with the second memory such that the desired digital signal can pass therebetween. Next, there is the step of transmitting the desired digital signal from the first memory with a transmitter in control and in possession of the first party to a receiver having the second memory at a location determined by the second party. The receiver is in possession and in control of the second party. There is also the step of then storing the digital signal in the second memory.

In summary, there has been disclosed a new and improved methodology/system by which Digital Audio Music can be electronically sold, distributed, transferred, and stored. Further, there has been disclosed a new and improved methodology/system by which Digital Audio Music can be electronically manipulated, i.e., sorted, cued, and selected for playback. Further still, there has beer disclosed a new and improved methodology/system by which the electronic manipulation of Digital Audio Music can be visually displayed for the convenience of the user. Additionally, there has been disclosed a new and improved methodology/system by which electronic copyright protection of quality Digital Audio Music is possible through use of this invention.

Since numerous changes may be made in the above described process and apparatus and different embodiments of the invention may be made without departing from the spirit thereof, it is intended that all matter contained in the foregoing description or shown in the accompanying drawings shall be interpreted as illustrative, and not in a limiting sense. Further, it is intended that this invention is not to be limited to Digital Audio Music and can include Digital Video, Digital Commercials, and other applications of digital information.

I claim:

1. A method for transmitting a desired digital audio signal stored on a first memory of a first party to a second memory of a second party comprising the steps of:

transferring money electronically via a telecommunication lien to the first party at a location remote from the second memory and controlling use of the first memory from the second party financially distinct from the first party, said second party controlling use and in possession of the second memory;

connecting electronically via a telecommunications line the first memory with the second memory such that the desired digital audio signal can pass therebetween;

transmitting the desired digital audio signal from the first memory with a transmitter in control and possession of the first party to a receiver having the second memory at a location determined by the second party, said receiver in possession and control of the second party; and

storing the digital signal in the second memory.

2. A method as described in claim **1** including after the transferring step, the steps of searching the first memory for the desired digital audio signal; and selecting the desired digital audio signal from the first memory.

3. A method as described in claim **2** wherein the transferring step includes the steps of telephoning the first party controlling use of the first memory by the second party; providing a credit card number of the second party controlling the second memory to the first party controlling the first memory so the second party is charged money.

4. A method for transmitting a desired digital video signal stored on a first memory of a first party to a second memory of a second party comprising the steps of:

transferring money electronically via a telecommunications line to the first party at a location remote from the second memory and controlling use of the first memory, from a second party financially distinct from the first party, said second party in control and in possession of the second memory;

connecting electronically via a telecommunications line the first memory with the second memory such that the desired digital video signal can pass therebetween;

transmitting the desired digital video signal from the first memory with a transmitter in control and possession of the first party to a receiver having the second memory at a location determined by the second party, said receiver in possession and control of the second party; and

storing the digital signal in the second memory.

5. A method as described in claim **4** including after the transferring money step, the step of searching the first memory for the desired digital signal and selecting the desired digital signal from the first memory.

6. A method as described in claim **5** wherein the transferring step includes the steps of telephoning the first party controlling use of the first memory by the second party controlling the second memory; providing a credit card number of the second party controlling the second memory to the first party controlling the first memory so the second party controlling the second memory is charged money.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 5,191,573 Page 1 of 3
DATED : March 2, 1993
INVENTOR(S) : Arthur R. Hair

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 1, line 12, replace "signal" with -- signals -- .

Column 1, line 17, replace ":" with -- , i.e., -- .

Column 1, line 38, replace "cueing" with -- queuing -- .

Column 1, line 40, replace "transfered" with -- transferred -- .

Column 1, line 42, replace "&:he" with -- the -- .

Column 1, line 43, replace "lengthly," with -- lengthy -- .

Column 1, line 44, replace "unnessary" with -- unnecessary -- .

Column 1, line 47, after "units", first occurrence, insert -- , -- .

Column 2, line 10, delete "is", second occurrence.

Column 2, line 13, after "invention" insert -- is -- .

Column 2, line 19, replace "cue" with -- queue -- .

Column 2, line 36, delete "-".

Column 2, line 59, replace "transfering" with -- transferring -- .

Column 2, line 59, replace "Audic" with -- Audio -- .

Column 2, line 64, replace "an" with -- and -- .

Column 3, line 36, replace "; and" with -- . -- .

Column 3, line 67, after "unit", second occurrence, insert -- 50 -- .

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 5,191,573

DATED : March 2, 1993

INVENTOR(S) : Arthur R. Hair

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 4, line 4, after "panel" insert -- 20a -- .

Column 4, line 5, after "circuit" insert -- 20b -- .

Column 4, line 9, replace "(display" with -- Display -- .

Column 4, lines 32 and 33, replace "system, additionally," with -- system. Additionally, -- .

Column 5, line 4, replace "jocky" with -- jockey -- .

Column 5, line 5, replace "cued" with -- queued -- .

Column 5, line 11, replace "&time" with -- time -- .

Column 5, line 12, replace "cued" with -- queued -- .

Column 5, line 20, replace "cued" with -- queued -- .

Column 5, line 28, replace "to" with -- on -- .

Column 5, line 32, replace "steps" with -- step -- .

Column 5, line 52, replace "cued" with -- queued -- .

Column 5, line 53, replace "beer" with -- been -- .

Column 6, line 9, replace "lien" with -- line -- .

Column 6, line 9, after "party" insert -- , -- .

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 5,191,573

DATED : March 2, 1993

INVENTOR(S) : Arthur R. Hair

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 6, line 11, after "memory" insert — , — .

Column 6, line 41, after "party" insert — , — .

Title page, item [57]

In the abstract, line 4, replace "steps" with — step — .

In the abstract, line 9, after "desired" insert — digital — .

Signed and Sealed this

Twenty-first Day of December, 1993

Attest:

BRUCE LEHMAN

Attesting Officer

Commissioner of Patents and Trademarks

US005191573C1

(12) EX PARTE REEXAMINATION CERTIFICATE (7888th)

United States Patent
Hair

(10) Number: US 5,191,573 C1
(45) Certificate Issued: Nov. 30, 2010

(54) METHOD FOR TRANSMITTING A DESIRED DIGITAL VIDEO OR AUDIO SIGNAL

(75) Inventor: **Arthur R. Hair**, Pittsburgh, PA (US)

(73) Assignee: **DMT Licensing, LLC**, Princeton, NJ (US)

Reexamination Request:
No. 90/007,402, Jan. 31, 2005

Reexamination Certificate for:

Patent No.:	**5,191,573**
Issued:	**Mar. 2, 1993**
Appl. No.:	**07/586,391**
Filed:	**Sep. 18, 1990**

Certificate of Correction issued Dec. 21, 1993.

Related U.S. Application Data

(63) Continuation of application No. 07/206,497, filed on Jun. 13, 1988, now abandoned.

(51) **Int. Cl.**

G11B 27/34	(2006.01)
G11B 27/031	(2006.01)
G11B 27/034	(2006.01)
G11B 27/00	(2006.01)
G11B 27/10	(2006.01)
G11B 20/00	(2006.01)
G07F 17/00	(2006.01)
G07F 17/16	(2006.01)
H04N 7/173	(2006.01)

(52) **U.S. Cl.** **369/84**; 235/380; 235/381; 348/E7.071; 369/15; 369/84; 369/85

(58) **Field of Classification Search** ..... None
See application file for complete search history.

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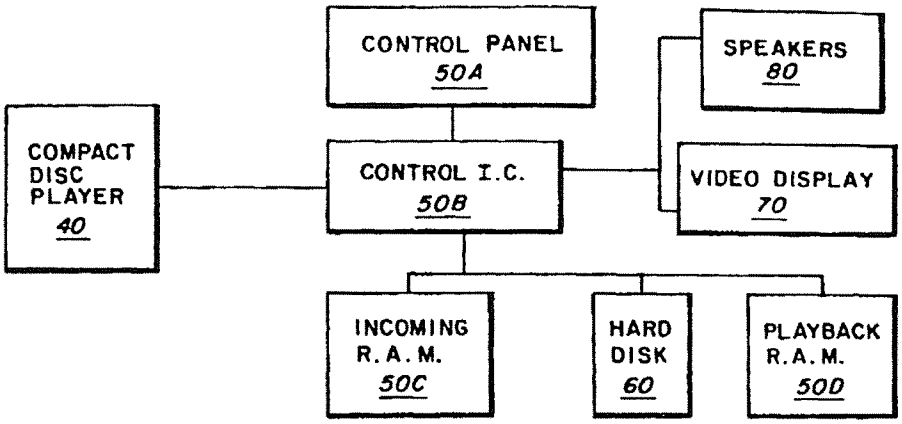
(Continued)

Primary Examiner—Roland G Foster

(57) **ABSTRACT**

The present invention is a method for transmtting a desired digital video or audio signal stored on a first memory of a first party to a second memory of a second party. The method comprises the step of transferring money via a telecommunications line to the first party from the second party. Additionally, the method comprises the step of then connecting electronically via a telecommunications line the first memory with the second memory such that the desired digital signal can pass therebetween. Next, there is the step of transmitting the desired digital signal from the first memory with a transmitter in control and in possession of the first party to a receiver having the second memory at a location determined by the second party. The receiver is in possession and in control of the second party. There is also the step of then storing the digital signal in the second memory.



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